WHAT IS CLAIMED IS:

1. A process for preparing a foam of a thermoplastic material, comprising:

mixing a physical foaming agent concentrate, comprising a solid carrier vehicle loaded with at least one physical foaming agent, with at least one thermoplastic material to form a mixture;

heating the mixture to a temperature above the melting point of the at least one thermoplastic material and at which the physical foaming agent concentrate releases the at least one physical foaming agent; and

releasing the heated mixture to reduced-pressure conditions.

2. The process according to claim 1, wherein the solid carrier vehicle is in the form of a powder or pellets.

3. The process according to claim 1, wherein the at least one thermoplastic material comprises a thermoplastic elastomer.

4. The process according to claim 1, wherein the at least one thermoplastic material comprises at least one thermoplastic vulcanizate.

5. The process according to claim 1, wherein the at least one thermoplastic material is selected from the group consisting of olefins, polyolefins, TPVs, styrenics, metallocene compositions, SEBs, SEPS, SBS, polyvinyl chlorides, thermoplastic urethanes, COPE , COPA, and fluoroelastomers, and mixtures thereof.

6. The process according to claim 1, wherein the step of mixing the physical foaming agent concentrate with at least one thermoplastic material to form a mixture further comprises mixing at least one additional ingredient.

7. The process according to claim 1, wherein the step of mixing the physical foaming agent concentrate with at least one thermoplastic material to form a mixture further comprises mixing at least one additional ingredient selected from the group consisting of fillers, waxes, stabilizers and colorants.

8. The process according to claim 1, wherein the physical foaming agent concentrate releases the physical foaming agent at a temperature within the range of 0-350°C.

9. The process according to claim 1, wherein the physical foaming agent concentrate releases the physical foaming agent at a temperature within the range of 10-350°C.

10. The process according to claim 1, wherein the physical foaming agent concentrate releases the physical foaming agent at a temperature within the range of 80°-250°C.

11. The process according to claim 1, wherein the at least one physical foaming agent is selected from the group consisting of water, low boiling point hydrocarbons, HFC and CFC.

12. The process according to claim 11, wherein the at least one physical foaming agent is water.

13. The process according to claim 1, wherein the amount of the at least one physical foaming agent released is in the range of 0.1-63% by weight relative to the total weight of the mixture.

14. The process according to claim 1, wherein the amount of the at least one physical foaming agent released is in the range of 0.1-50% relative to the total weight of the mixture.

15. The process according to claim 1, wherein the amount of the at least one physical foaming agent released is in the range of 0.1-20% relative to the total weight of the mixture.

16. The process according to claim 1, wherein the process is carried out in an extruder with a L/D ratio from about 18:1 to about 42:1.

17. The process according to claim 1, wherein the process is carried out in an extruder with a L/D ratio from about 20:1 to about 32:1.

18. The process according to claim 1, wherein the solid carrier vehicle is a liquid absorbing material.

19. The process according to claim 1, wherein the solid carrier vehicle comprises pellets or powder formed of super-absorbent polymers, organic fillers or high surface area polymeric materials.

20. The process according to claim 1, wherein the solid carrier vehicle comprises pellets or powder formed of porous or microporous polymers.

21. The process according to claim 20, wherein the porous or microporous polymers are selected from the group consisting of EVA, high density polyethylene, low density polyethylene, LLDPE, polypropylene, polystyrene, PET and polyamide.

22. The process according to claim 19, wherein the at least one super-absorbent polymer is selected from the group consisting of polyacrylates and polyacrylamides.

23. The process according to claim 1, wherein the solid carrier vehicle comprises at least one organic filler.

24. The process according to claim 1, wherein the solid carrier vehicle comprises at least one inorganic filler.

25. The process according to claim 1, wherein the solid carrier vehicle is hydrophilic.

26. The process according to claim 1, wherein the solid carrier vehicle is hydrophobic.

27. A foamed thermoplastic article, produced by a process according to claim 1.

28. A physical foaming agent concentrate, comprising a solid carrier vehicle loaded with at least one physical foaming agent in a form that can be mixed with at least one thermoplastic material to form a mixture and heated to release the at least one physical foaming agent from the vehicle.

29. The concentrate according to claim 28, wherein the solid carrier vehicle is in the form of a powder or pellets.

30. The concentrate according to claim 28, wherein the at least one physical foaming agent concentrate further comprises at least one additional ingredient.

31. The concentrate according to claim 30, wherein the at least one additional ingredient is selected from the group consisting of fillers, waxes, stabilizers and colorants.

32. The concentrate according to claim 28, wherein the at least one physical foaming agent is selected from the group consisting of water, low boiling point hydrocarbons, HFC and CFC.

33. The concentrate according to claim 32, wherein the at least one physical foaming agent is water.

34. The concentrate according to claim 28, wherein the amount of the at least one physical foaming agent released is in the range of 0.1-63% by weight relative to the total weight of the mixture.

35. The concentrate according to claim 28, wherein the amount of the at least one physical foaming agent released is in the range of 0.1-50% by weight relative to the total weight of the mixture.

36. The concentrate according to claim 28, wherein the amount of the at least one physical foaming agent released is in the range of 0.1-20% by weight relative to the total weight of the mixture.

37. The concentrate according to claim 28, wherein the solid carrier vehicle is a liquid absorbing material.

38. The concentrate according to claim 28, wherein the solid carrier vehicle comprises pellets or powder formed of super-absorbent polymers, organic fillers or high surface area polymeric materials.

39. The concentrate according to claim 28, wherein the solid carrier vehicle comprises pellets or powder formed at least one of porous or microporous polymers.

40. The concentrate according to claim 39, wherein the at least one porous or microporous polymers is selected from the group consisting of EVA, high density polyethylene, low density polyethylene, LLDPE, polypropylene, polystyrene, PET and polyamide.

41. The concentrate according to claim 38, wherein the at least one super-absorbent polymer is selected from the group consisting of polyacrylates and polyacrylamides.

42. The concentrate according to claim 28, wherein the solid carrier vehicle comprises at least one organic filler.

43. The concentrate according to claim 28, wherein the solid carrier vehicle comprises at least one inorganic filler.

44. The concentrate according to claim 28, wherein the solid carrier vehicle is hydrophilic.

45. The concentrate according to claim 28, wherein the solid carrier vehicle is hydrophobic.

46. The concentrate according to claim 28, wherein the at least one physical foaming agent is released at a temperature within the range of 0-350°C.

47. The concentrate according to claim 28, wherein the at least one physical foaming agent is released at a temperature within the range of 10-350°C.

48. The concentrate according to claim 28, wherein the at least one physical foaming agent is released at a temperature within the range of 80°-250°C.